



Complete Summary

TITLE

Surgical care improvement project: percent of surgery patients on beta-blocker therapy prior to arrival who received a beta-blocker during the perioperative period.

SOURCE(S)

Specifications manual for national hospital inpatient quality measures, version 3.0c. Centers for Medicare & Medicaid Services (CMS), The Joint Commission; 2009 Oct 1. various p.

Measure Domain

PRIMARY MEASURE DOMAIN

Process

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the [Measure Validity](#) page.

SECONDARY MEASURE DOMAIN

Does not apply to this measure

Brief Abstract

DESCRIPTION

This measure is used to assess the percent of surgery patients on beta-blocker therapy prior to arrival who received a beta-blocker during the perioperative period. The perioperative period for the Surgical Care Improvement Project (SCIP) cardiac measures is defined as 24 hours prior to surgical incision through discharge from post-anesthesia care/recovery area.

RATIONALE

Concerns regarding the discontinuation of beta-blocker therapy in the perioperative period have existed for several decades. Shammash and colleagues studied a total of 140 patients who received beta-blockers preoperatively. Mortality in the 8 patients who had beta-blockers discontinued postoperatively (50%) was significantly greater than in the 132 patients in whom beta-blockers

were continued. Hoeks and colleagues studied 711 consecutive peripheral vascular surgery patients. After adjustment for potential confounders and the propensity of its use, continuous beta-blocker use remained significantly associated with a lower 1-year mortality than among nonusers. In contrast, beta-blocker withdrawal was associated with an increased risk of 1-year mortality compared with nonusers. The American College of Cardiology/American Heart Association cite continuation of beta-blocker therapy in the perioperative period as a class I indication, and accumulating evidence suggests that titration to maintain tight heart rate control should be the goal.

PRIMARY CLINICAL COMPONENT

Surgery; perioperative period; beta-blocker therapy

DENOMINATOR DESCRIPTION

All surgery patients on beta-blocker therapy prior to arrival (see the related "Denominator Inclusions/Exclusions" field in the Complete Summary and Appendix A, Table 5.10 for the list of selected surgeries)

NUMERATOR DESCRIPTION

Surgery patients on beta-blocker therapy prior to arrival who receive a beta-blocker during the perioperative period*

*The perioperative period for the Surgical Care Improvement Project (SCIP) cardiac measures is defined as 24 hours prior to surgical incision through discharge from post-anesthesia care/recovery area.

Evidence Supporting the Measure

EVIDENCE SUPPORTING THE CRITERION OF QUALITY

- A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence
- A systematic review of the clinical literature
- One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

NATIONAL GUIDELINE CLEARINGHOUSE LINK

- [ACC/AHA 2007 guidelines on perioperative cardiovascular evaluation and care for noncardiac surgery.](#)

Evidence Supporting Need for the Measure

NEED FOR THE MEASURE

Use of this measure to improve performance

EVIDENCE SUPPORTING NEED FOR THE MEASURE

Belzberg H, Rivkind AI. Preoperative cardiac preparation. Chest 1999 May;115(5 Suppl):82S-95S. [158 references] [PubMed](#)

Boersma E, Poldermans D, Bax JJ, Steyerberg EW, Thomson IR, Banga JD, van De Ven LL, van Urk H, Roelandt JR, DECREASE Study Group (Dutch Echocardiographic Cardiac Risk Evaluation Applying Predictors of cardiac events after major vascular surgery: Role of clinical characteristics, dobutamine echocardiography, and beta-blocker therapy. JAMA 2001 Apr 11;285(14):1865-73. [PubMed](#)

Ewald GA, McKenzie CR, editor(s). Manual of medical therapeutics. 28th ed. St. Louis (MO): Department of Medicine Washington University, School of Medicine; 1995.

Fleisher LA, Beckman JA, Brown KA, Calkins H, Chaikof E, Fleischmann KE, Freeman WK, Froehlich JB, Kasper EK, Kersten JR, Riegel B, Robb JF, Smith SC Jr, Jacobs AK, Adams CD, Anderson JL, Antman EM, Buller CE, Creager MA, Ettinger SM, Faxon DP, Fuster V, Halperin JL, Hiratzka LF, Hunt SA, Lytle BW, Nishimura R, Ornato JP, Page RL, Riegel B, Tarkington LG, Yancy CW, American College of Cardiology, American Heart Association Task Force on Practice Guidelines (writing Committee, American Society of Echocardiography, American Society of Nuclear Cardiology, Heart Rhythm Society, Society of Cardiovascular Anesthesiologists, Society for Cardiovascular Angiography and Interventions, Society for Vascular Medicine and Biology, Society for Vascular Surgery. ACC/AHA 2007 guidelines on perioperative cardiovascular evaluation and care for noncardiac surgery. J Am Coll Cardiol 2007 Oct 23;50(17):e159-241. [584 references] [PubMed](#)

Goldman L. Noncardiac surgery in patients receiving propranolol. Case reports and recommended approach. Arch Intern Med 1981 Feb;141(2):193-6. [PubMed](#)

Hoeks SE, Scholte Op Reimer WJ, van Urk H, Jorning PJ, Boersma E, Simoons ML, Bax JJ, Poldermans D. Increase of 1-year mortality after perioperative beta-blocker withdrawal in endovascular and vascular surgery patients. Eur J Vasc Endovasc Surg 2007 Jan;33(1):13-9. [PubMed](#)

McGory ML, Maggard MA, Ko CY. A meta-analysis of perioperative beta blockade: what is the actual risk reduction. Surgery 2005 Aug;138(2):171-9. [PubMed](#)

Pasternack PF, Imparato AM, Baumann FG, Laub G, Riles TS, Lamparello PJ, Grossi EA, Berguson P, Becker G, Bear G. The hemodynamics of beta-blockade in patients undergoing abdominal aortic aneurysm repair. Circulation 1987 Sep;76(3 Pt 2):III1-7. [PubMed](#)

Poldermans D, Boersma E, Bax JJ, Thomson IR, van de Ven LL, Blankensteijn JD, Baars HF, Yo TI, Trocino G, Vigna C, Roelandt JR, van Urk H. The effect of bisoprolol on perioperative mortality and myocardial infarction in high-risk patients undergoing vascular surgery. Dutch Echocardiographic Cardiac Risk Evaluation Applying Stress Echocardiography Study Group. N Engl J Med 1999 Dec 9;341(24):1789-94. [PubMed](#)

Shammash JB, Trost JC, Gold JM, Berlin JA, Golden MA, Kimmel SE. Perioperative beta-blocker withdrawal and mortality in vascular surgical patients. Am Heart J 2001 Jan;141(1):148-53. [PubMed](#)

Yeager RA, Moneta GL, Edwards JM, Taylor LM Jr, McConnell DB, Porter JM. Reducing perioperative myocardial infarction following vascular surgery. The potential role of beta-blockade. Arch Surg 1995 Aug;130(8):869-72; discussion 872-3. [PubMed](#)

Yusuf S, Peto R, Lewis J, Collins R, Sleight P. Beta blockade during and after myocardial infarction: an overview of the randomized trials. Prog Cardiovasc Dis 1985 Mar-Apr;27(5):335-71. [PubMed](#)

State of Use of the Measure

STATE OF USE

Current routine use

CURRENT USE

Accreditation
Collaborative inter-organizational quality improvement
External oversight/Medicaid
External oversight/Medicare
Internal quality improvement

Application of Measure in its Current Use

CARE SETTING

Hospitals

PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Measure is not provider specific

LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Single Health Care Delivery Organizations

TARGET POPULATION AGE

Age greater than or equal to 18 years

TARGET POPULATION GENDER

Either male or female

STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

Characteristics of the Primary Clinical Component

INCIDENCE/PREVALENCE

Unspecified

ASSOCIATION WITH VULNERABLE POPULATIONS

Unspecified

BURDEN OF ILLNESS

See the "Rationale" field.

UTILIZATION

Unspecified

COSTS

Unspecified

Institute of Medicine National Healthcare Quality Report Categories

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness
Timeliness

Data Collection for the Measure

CASE FINDING

Users of care only

DESCRIPTION OF CASE FINDING

All surgery patients, age 18 years and older, on beta-blocker therapy prior to arrival

DENOMINATOR SAMPLING FRAME

Patients associated with provider

DENOMINATOR INCLUSIONS/EXCLUSIONS

Inclusions

Discharges, 18 years of age and older, with an International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Principal Procedure Code of selected surgeries as defined in the appendices of the original measure documentation and who were on beta-blocker therapy prior to arrival

Exclusions

- Patients less than 18 years of age
- Patients who have a Length of Stay (LOS) greater than 120 days
- Patients whose ICD-9-CM principal procedure was performed entirely by *Laparoscope*
- Patients enrolled in clinical trials
- Patients whose ICD-9-CM principal procedure occurred prior to the date of admission
- Patients who expired during the perioperative period
- Pregnant patients taking a beta-blocker prior to arrival
- Patients with a documented *Reason for Not Administering Beta-Blocker-Perioperative*

RELATIONSHIP OF DENOMINATOR TO NUMERATOR

All cases in the denominator are equally eligible to appear in the numerator

DENOMINATOR (INDEX) EVENT

Institutionalization
Therapeutic Intervention

DENOMINATOR TIME WINDOW

Time window brackets index event

NUMERATOR INCLUSIONS/EXCLUSIONS

Inclusions

Surgery patients on beta-blocker therapy prior to arrival who receive a beta-blocker during the perioperative period*

*The perioperative period for the Surgical Care Improvement Project (SCIP) cardiac measures is defined as 24 hours prior to surgical incision through discharge from post-anesthesia care/recovery area.

Exclusions

None

MEASURE RESULTS UNDER CONTROL OF HEALTH CARE PROFESSIONALS, ORGANIZATIONS AND/OR POLICYMAKERS

The measure results are somewhat or substantially under the control of the health care professionals, organizations and/or policymakers to whom the measure applies.

NUMERATOR TIME WINDOW

Fixed time period

DATA SOURCE

Administrative data
Medical record

LEVEL OF DETERMINATION OF QUALITY

Individual Case

PRE-EXISTING INSTRUMENT USED

Unspecified

Computation of the Measure

SCORING

Rate

INTERPRETATION OF SCORE

Better quality is associated with a higher score

ALLOWANCE FOR PATIENT FACTORS

Unspecified

STANDARD OF COMPARISON

External comparison at a point in time
External comparison of time trends
Internal time comparison

Evaluation of Measure Properties

EXTENT OF MEASURE TESTING

Unspecified

Identifying Information

ORIGINAL TITLE

SCIP-Card-2: surgery patients on beta-blocker therapy prior to arrival who received a beta-blocker during the perioperative period.

MEASURE COLLECTION

[National Hospital Inpatient Quality Measures](#)

MEASURE SET NAME

[Surgical Care Improvement Project \(SCIP\)](#)

SUBMITTER

Centers for Medicare & Medicaid Services
Joint Commission, The

DEVELOPER

Centers for Medicare & Medicaid Services/The Joint Commission

FUNDING SOURCE(S)

All external funding for measure development has been received and used in full compliance with The Joint Commission's Corporate Sponsorship policies, which are available upon written request to The Joint Commission.

COMPOSITION OF THE GROUP THAT DEVELOPED THE MEASURE

The Centers for Medicare & Medicaid Services assembled and maintained the Technical Expert Panel for development of the Surgical Infection Prevention Project (SIP) measures in 2002. The SIP set subsequently transitioned to the Surgical Care Improvement Project (SCIP) effective July 1, 2006. The panel has been maintained by the Centers for Medicare & Medicaid Services since the inception of the project.

SCIP Partners include the Steering Committee of 10 national organizations who have pledged their commitment and full support for SCIP:

- Agency for Healthcare Research and Quality
- American College of Surgeons
- American Hospital Association
- American Society of Anesthesiologists
- Association of Perioperative Registered Nurses
- Centers for Disease Control and Prevention
- Centers for Medicare & Medicaid Services
- Institute for Healthcare Improvement

- The Joint Commission
- Veterans Health Administration

FINANCIAL DISCLOSURES/OTHER POTENTIAL CONFLICTS OF INTEREST

Expert panel members have made full disclosure of relevant financial and conflict of interest information in accordance with the Conflict of Interest policies, copies of which are available upon written request to The Joint Commission and the Centers for Medicare & Medicaid Services.

ENDORSER

National Quality Forum

ADAPTATION

Measure was not adapted from another source.

RELEASE DATE

2006 Jun

REVISION DATE

2009 Oct

MEASURE STATUS

This is the current release of the measure.

This measure updates a previous version: Specifications manual for national hospital quality measures, version 2.5b. Centers for Medicare & Medicaid Services (CMS), The Joint Commission; 2008 Oct. various p.

SOURCE(S)

Specifications manual for national hospital inpatient quality measures, version 3.0c. Centers for Medicare & Medicaid Services (CMS), The Joint Commission; 2009 Oct 1. various p.

MEASURE AVAILABILITY

The individual measure, "SCIP-Card-2: Surgery Patients on Beta-blocker Therapy Prior to Arrival Who Received a Beta-blocker During the Perioperative Period," is published in "Specifications Manual for National Hospital Inpatient Quality Measures." This document is available from [The Joint Commission Web site](#). Information is also available from the [Centers for Medicare & Medicaid Services \(CMS\) Web site](#). Check The Joint Commission Web site and CMS Web site regularly for the most recent version of the specifications manual and for the applicable dates of discharge.

COMPANION DOCUMENTS

The following are available:

- A software application designed for the collection and analysis of quality improvement data, the CMS Abstraction and Reporting Tool (CART), is available from the [CMS CART Web site](#). Supporting documentation is also available. For more information, e-mail CMS PROINQUIRIES at proinquiries@cms.hhs.gov.
- The Joint Commission. A comprehensive review of development and testing for national implementation of hospital core measures. Oakbrook Terrace (IL): The Joint Commission; 40 p. This document is available from [The Joint Commission Web site](#).
- The Joint Commission. Attributes of core performance measures and associated evaluation criteria. Oakbrook Terrace (IL): The Joint Commission; 5 p. This document is available from [The Joint Commission Web site](#).

NQMC STATUS

This NQMC summary was originally completed by ECRI on May 8, 2007. This NQMC summary was updated by ECRI Institute on October 26, 2007. The Joint Commission informed NQMC that this measure was updated on June 30, 2008 and provided an updated version of the NQMC summary. This NQMC summary was updated accordingly by ECRI Institute on December 11, 2008. The information was verified by the Centers for Medicare & Medicaid Services on March 19, 2009. The Joint Commission informed NQMC that this measure was updated again on October 1, 2009 and provided an updated version of the NQMC summary. This NQMC summary was updated accordingly by ECRI Institute on December 9, 2009. The information was verified by the Centers for Medicare & Medicaid Services on February 18, 2010.

COPYRIGHT STATEMENT

The Specifications Manual for National Hospital Inpatient Quality Measures [Version 3.0b, October, 2009] is the collaborative work of the Centers for Medicare & Medicaid Services and The Joint Commission. The Specifications Manual is periodically updated by the Centers for Medicare & Medicaid Services and The Joint Commission. Users of the Specifications Manual for National Hospital Quality Measures should periodically verify that the most up-to-date version is being utilized.

Disclaimer

NQMC DISCLAIMER

The National Quality Measures Clearinghouse™ (NQMC) does not develop, produce, approve, or endorse the measures represented on this site.

All measures summarized by NQMC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations,

public and private organizations, other government agencies, health care organizations or plans, individuals, and similar entities.

Measures represented on the NQMC Web site are submitted by measure developers, and are screened solely to determine that they meet the NQMC Inclusion Criteria which may be found at <http://www.qualitymeasures.ahrq.gov/about/inclusion.aspx>.

NQMC, AHRQ, and its contractor ECRI Institute make no warranties concerning the content or its reliability and/or validity of the quality measures and related materials represented on this site. The inclusion or hosting of measures in NQMC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding measure content are directed to contact the measure developer.

[Copyright/Permission Requests](#)

Date Modified: 3/29/2010

